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[Attached Document]

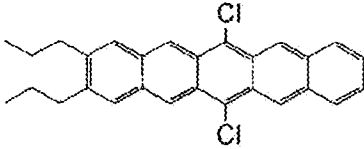
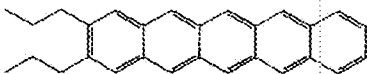
A verification of the effect of the oxidation resistance by introducing the halogen group:

An oxidation resistance of the 6,13-dichloro-2,3-di(n-plopyl) pentacene included in the invention claimed in claim 1 of the present patent application and an oxidation resistance of the 2,3-di(n-plopyl) pentacene without substituting the halogen group, as a comparison example, are examined.

[Method of Examination]

The orthodichlorobenzene-d₄(0.13wt%) solution of the 6,13-dichloro-2,3-di(n-plopyl) pentacene and the orthodichlorobenzene-d₄(0.13wt%) solution of the 2,3-di(n-plopyl) pentacene are prepared in the NMR tube at the normal atmosphere and both of them are heated for two hours at the temperature of eighty degrees Celsius by the oil-bath. The decomposed amount of the both cases of the pentacene were verified for a solution immediately after the solution was prepared and for a solution after the solution was heated, by measuring the ¹H NMR spectrum.

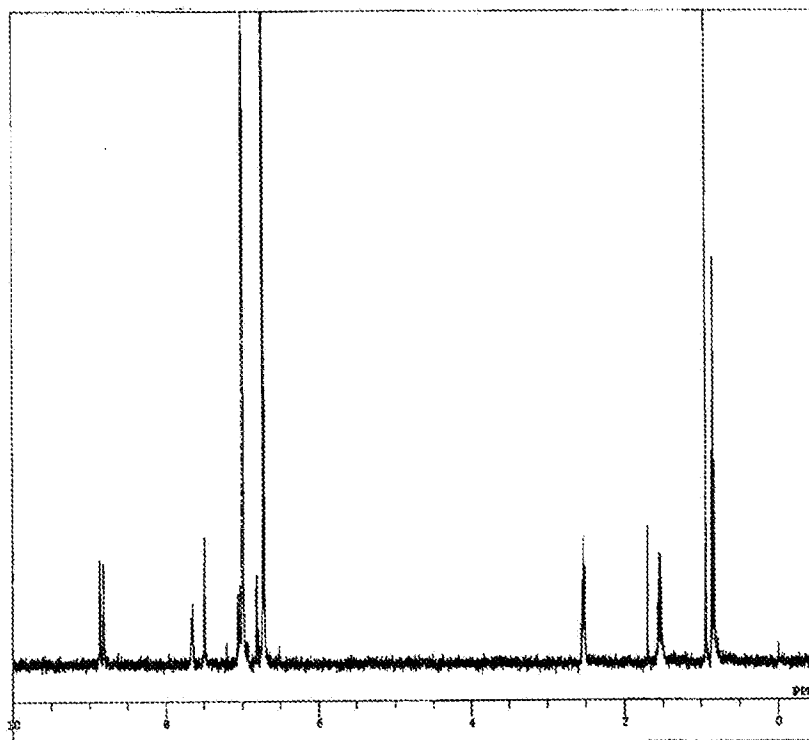
[Result]

	Embodiment	Comparative Example
Chemical Compound	 6,13-dichloro-2,3-di(n-plopyl) pentacene	 2,3-di(n-plopyl) pentacene
Decomposition Rate (¹ H NMR)	Less than 15%	100%

The decomposed rate of the 6,13-dichloro-2,3-di(n-plopyl) pentacene is about 10% after two hours of heating compared with immediately after the solution was prepared. The main decomposed compound is the 2,3-di(n-plopyl)-6,13-pentacene quinone which is the oxidation-product (Please refer to FIGS. 1, 2 and 5). On the other hand, the 2,3-di(n-plopyl) pentacene has completely decomposed after two hours of heating, and the main product of the decomposed compound is also 2,3-di(n-plopyl)-6,13-pentacene quinone (Please refer to FIGS. 3, 4 and 6). This examination result strongly indicates an improving effect of the oxidation resistance by introducing the halogen group (Cl atoms).

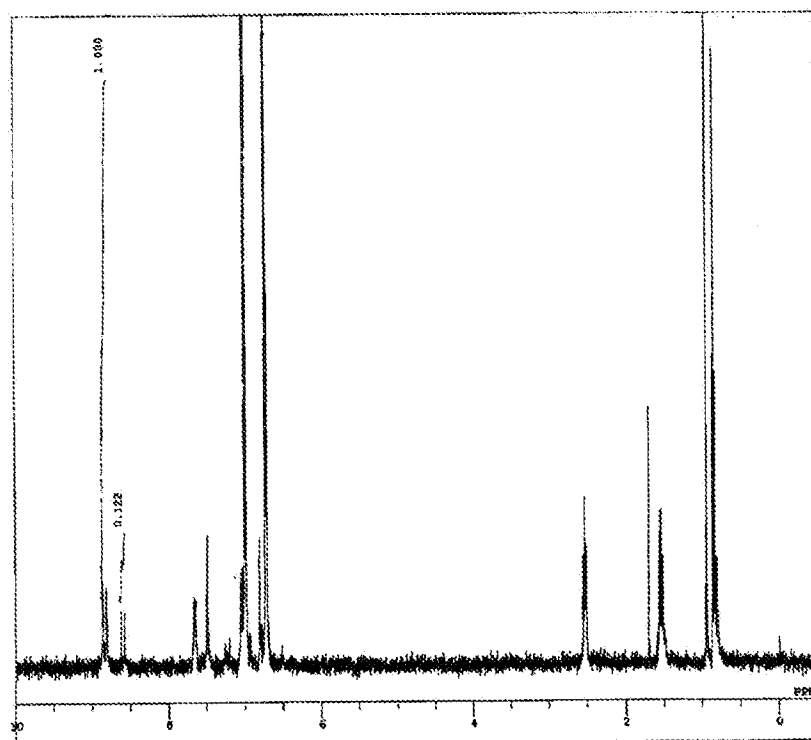
[FIG. 1]

The ^1H NMR spectrum of the 6,13-dichloro-2,3-di(n-propyl)pentacene immediately after the solution was prepared.



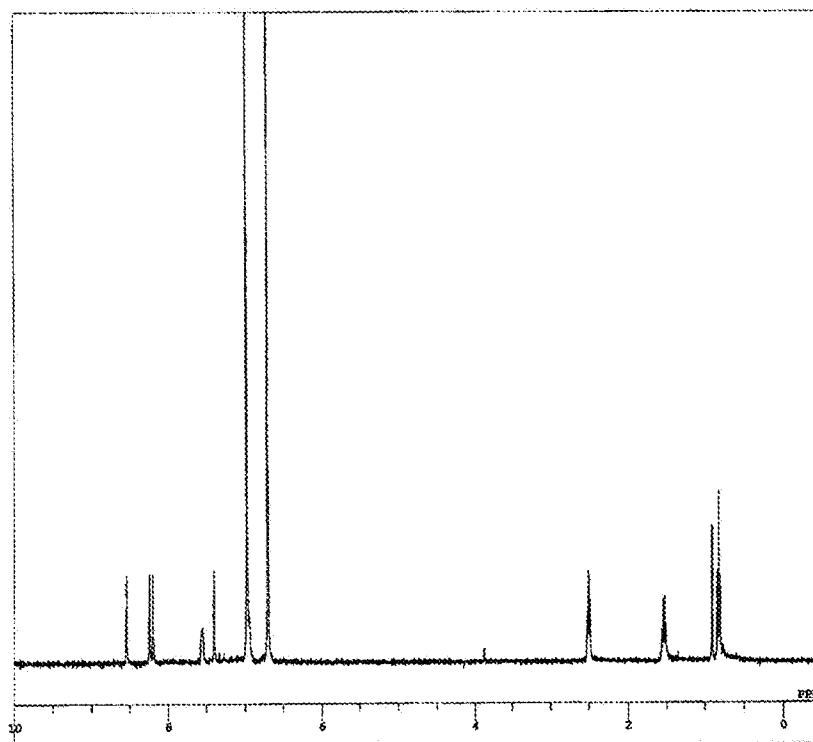
[FIG. 2]

The ^1H NMR spectrum of the 6,13-dichloro-2,3-di(n-picpyl) pentacene after the solution was heated for two hours.



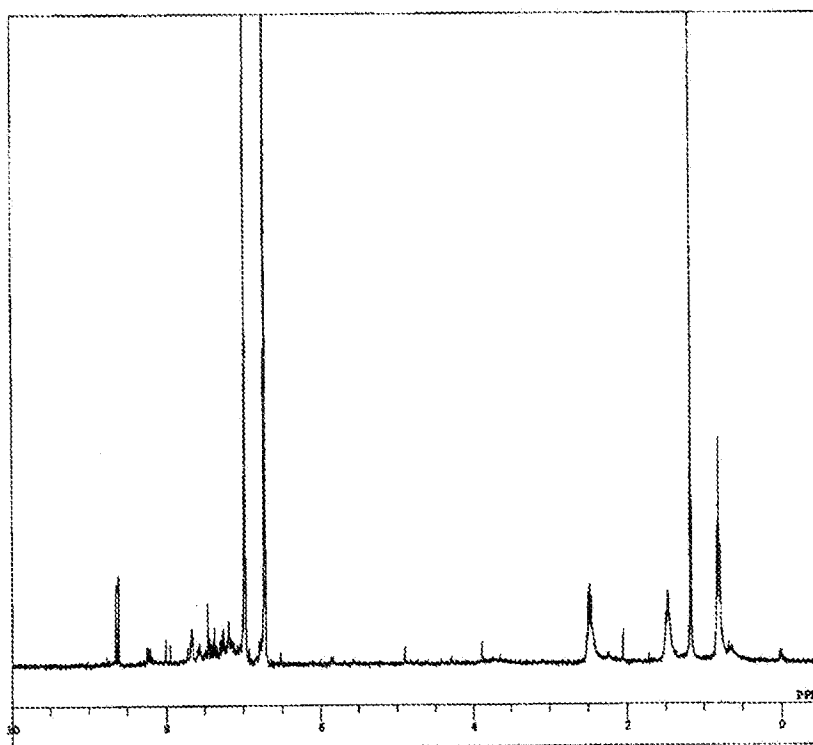
[FIG. 3]

The ^1H NMR spectrum of the 2,3-di(n-propyl) pentacene immediately after the solution was prepared.



[FIG. 4]

The ^1H NMR spectrum of the 2,3-di(n-plopyl) pentacene after the solution was heated for two hours.

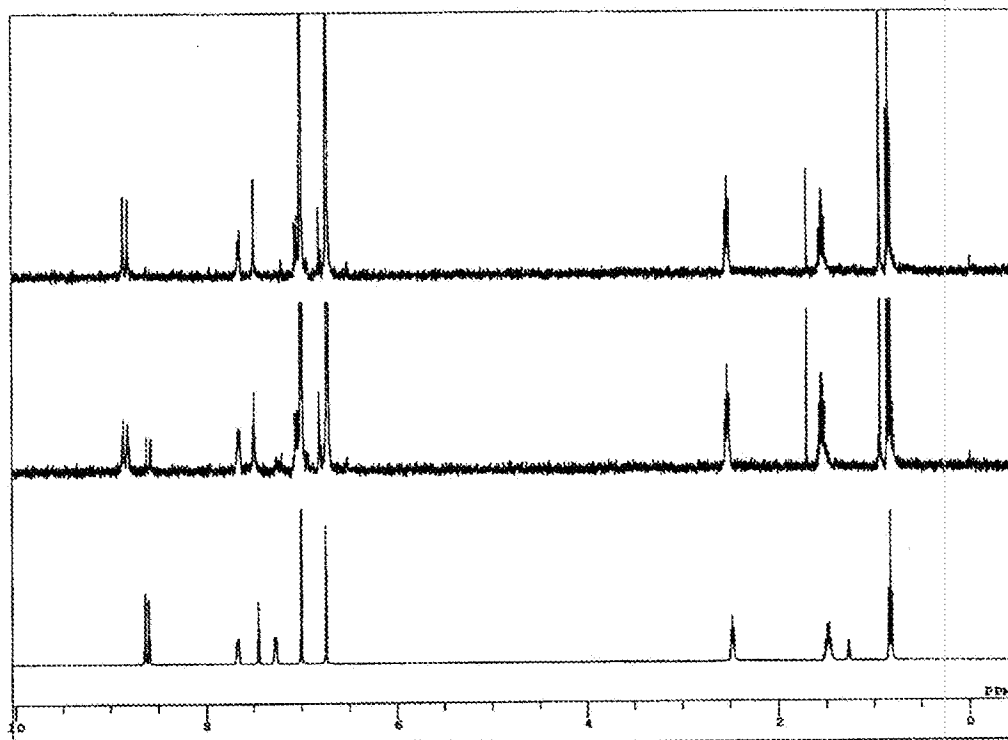


[FIG. 5]

Top Line: The ^1H NMR spectrum of the 6,13-dichloro-2,3-di(n-plopyl) pentacene immediately after the solution was prepared (same spectrum as shown in FIG.1).

Middle Line: The ^1H NMR spectrum of the 6,13-dichloro-2,3-di(n-plopyl) pentacene after the solution was heated for two hours (same spectrum as shown in FIG.2).

Bottom Line: The ^1H NMR spectrum of the 2,3-di(n-plopyl)-6,13-pentacene quinone.



[FIG. 6]

Top Line: The ^1H NMR spectrum of the 2,3-di(n-plopyl) pentacene immediately after the solution was prepared (same spectrum as shown in FIG.3).

Middle Line: The ^1H NMR spectrum of the 2,3-di(n-plopyl) pentacene after the solution was heated for two hours (same spectrum as shown in FIG.4).

Bottom Line: The ^1H NMR spectrum of the 2,3-di(n-plopyl)-6,13-pentacene quinone.

